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MEDIA LITERACY AND FAKE NEWS VULNERABILITY: A STUDY OF BODO MEDI-UM STUDENTS OF BODOLAND, ASSAM

Senwarn Sun Goyary [1], Perosh Jimmy Daimari [2]

[1] Research Scholar, Department of Mass Communication, Tezpur University, Assam, India
[2] Assistant Professor, Department of Mass Communication, Tezpur University, Assam, India

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Corresponding Author
Senwarn Sun Goyary,
Senwarn.Goyary@outlook.com

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ABSTRACT

This study examines digital media literacy and fake news vulnerability among 342 Bodo medium secondary school students drawn from five districts of the Bodoland Territorial Region (BTR) in Assam, India. A cross-sectional survey of students enrolled in Grades 9 to 12 was con-ducted and the data were analyzed using descriptive statistics, Pearson correlations and multiple linear and binary logistic regression. The find-ings indicate that smartphones (92.7 per cent) constitute the dominant means of digital access for these students with messaging application and video-sharing platforms accounting for the bulk of their daily engage-ment. Verification practices, however, remain limited: only 19.3 per cent of the respondents reported that they always verify information before sharing and 45.3 per cent indicated a high likelihood of forwarding con-tent without prior verification. Among the predictors examined, confi-dence in evaluating credibility emerged as the strongest predictor of feeling equipped to identify fake news ($\beta = .29$, $p < .001$), while a higher valuation of source checking was found to reduce the odds of high shar-ing risk (OR = 0.77 per step, $p = .046$). Students enrolled in Class 12 were found to be more than twice as likely to fall within the high-risk group (OR = 2.22, $p = .047$). Results support the need for culturally and linguis-tically contextualized media literacy instruction in Bodo medium schools that emphasizes source verification, teacher and parent scaffolding and attention-focused accuracy prompts.

Keywords: Media Literacy, Fake News, Bodoland Territorial Region, Tribal Education

1. INTRODUCTION

The rapid expansion of digital connectivity has transformed how adolescents encounter, evaluate and share information. Misinformation now reaches a wider audience and travels at a far greater speed than verified content. In their large-scale Twitter study, Vosoughi et al (2018) reported that falsehood diffused "farther, faster, deeper and more broadly" (p.1146) than accurate information across every category of news examined. The literature suggests that misinformation thrives on novelty and emotional intensity (Brady et al., 2017) and the design of contemporary platform – particularly engagement-driven ranking and the ease of forwarding – tends to work against careful evaluation by the user (Allcott & Gentzkow, 2017; Kozyreva et al., 2020; and Lazer et al., 2018). For young readers who have grown up

within this environment, the question is no longer whether they will encounter fake news, but whether they have developed the habits and competencies to identify it.

Media literacy, understood as the capacity to access, analyze, evaluate and produce media content (Hobbs, 2010; Potter, 2010; UNESCO, 2021), is widely regarded as the principal educational response to this challenge. The available evidence is encouraging in several respects. Brief, skill-focused interventions have been shown to improve the ability of the users to discriminate between true and false headlines (Basol et al., 2020; Guess et al., 2020; Jeong et al., 2012), and accuracy nudges have been found to operate even more simply: Pennycook et al (2021), for instance, demonstrated that "subtly shifting attention to accuracy" (p. 590) improves the quality of news that users subsequently share. The matter is complicated, however, by the fact that adolescents constitute the very population whose evaluation skills appear to lag behind their level of digital connectivity (Breakstone et al., 2021; McGrew et al., 2018; Wineburg & McGrew, 2019).

These complications are accentuated once the geographic context is taken into account. The bulk of the existing evidence base is drawn from English-language, urban, high-income settings. Guess et al (2020), for instance, administered the same intervention in the United States, urban India and rural northern India; while it produced clear gains in the first two settings, it yielded no detectable improvement in the third. Badrinathan's (2021) field experiment in Bihar and Uttar Pradesh actually worsened accuracy on co-partisan claims. In Indian context, misinformation often circulates not through articles but through WhatsApp images and forwarded videos that travel within trust-dense family and community groups. (Garimella & Eckles, 2020; Shahi & Hale, 2025). Jones-Jang et al (2019) have further shown that what predicts the identification of fake news information literacy in particular, rather than "media literacy" treated as a vague disposition. Imported curricula tend to perform poorly in such terrain; culturally responsive approaches (Riley et al., 2025) and audio-first WhatsApp formats (Winters et al., 2021) generally outperform direct translations of English-language modules.

It is precisely in this gap that the present study is situated. Bodo medium secondary-school students in the Bodoland Territorial Region (BTR) are placed at the intersection of three pressures: heavy smartphone use, rural residence with the connectivity gaps that often accompany it (Sindakis & Showkat, 2024; Ziipao, 2023) and a vernacular medium of instruction in which subject resources, fact-checking tools and media-literacy materials remain limited (Mohanty, 2010; Nakamura et al., 2023). The fact-checkers, tiplines and curricula that would be most useful to them are, for most part, written in languages other than Bodo. Against this background, the present study addresses four research questions. First, what does digital media use actually look like for this population? Second, how do these students describe their verification habits, their confidence levels and their familiarity with the relevant concepts? Third, which variables are associated with the markers of vulnerability? And fourth, which combinations of variables best predict feeling equipped, perceived encounter with fake news, and high sharing risk?

2. METHODOLOGY

The study made use of a cross-sectional survey design, which is well suited to estimating prevalence and identifying modifiable correlates within a defined population (Setia, 2016). Data were collected in person during regular hours across all five districts of the BTR, namely, Kokrajhar, Chirang, Baksa, Udalguri and Tamulpur. A two-stage stratified cluster sampling procedure was adopted: in the first stage, two government or government-aided Bodo medium schools were purposively selected from each district – one rural and one semi-urban or urban – yielded a total of ten schools; in the second stage, intact classes from Grades 9 to 12 within each school were surveyed. Of the 366 questionnaires distributed, 342 were returned in an analytically usable form, producing a response rate of 93.4 per cent. The sample comfortably meets the conventional 20-cases-per-predictor requirement for regression with up to 14 predictors and it also exceeds the minimum required to detect r=.15 at α=.05 with power=.80 (Faul et al., 2009).

The questionnaire administered to the students covered four broad domains. The first dealt with demographic characteristics, The second covered digital access and included items on the primary device used, the frequency of internet use, the average daily hours spent online and the frequency of using social media, news websites or application, video platforms and messaging applications. The third domain covered literacy behaviours and perceptions, with items on verifying, cross-checking, confidence, the perceived importance of source checking, conceptual familiarity and feeling equipped. The fourth domain covered vulnerability indicators, namely prior encounter with fake news, perceived encounter frequency and the likelihood of sharing without verification. The non-demographic items used 5-point scales adapted from validated instruments (Jones-Jang et al., 2019; Metzger et al., 2010); these were translated into Bodo using

forward-backward translation procedures (Boateng et al., 2018) and were pilot-tested with 25 students whose responses were excluded from the final dataset. The 4-item literacy behaviour subscale produced a Cronbach's α of .60. Written consent and assent were secured from the parents and students respectively and participation was kept entirely voluntary and anonymous.

All analyses were carried out in IBM SPSS Statistics 28 and were cross-validated in Python. The ordinal items were coded numerically, since parametric methods are known to be robust to such treatment (Norman, 2010). Multiple linear regression was applied to the two continuous outcomes, namely, feeling equipped and perceived encounter, while binary logistic regression was applied to high sharing risk, which was defined as a response a response of "likely" or "very likely" to share without verification. All the regression models were adjusted for age, gender, area type and a Class 12 dummy variable. The variance inflation factors were found to remain below 2.5, and missing data, which were under 3 per cent on any single item, were addressed through listwise detection. The level of significance was set at α = .05, two-tailed.

3. RESULTS

3.1. SAMPLE PROFILE AND DIGITAL ACCESS

Of the 342 participants in the study, 69.0 per cent were female and the mean age of the sample was 16.60 years (SD=1.42); 62.6 per cent of the respondents resided in rural areas (Table 1). The pattern of digital access was unambiguous, with smartphones being reported was the primary device by 92.7 per cent of the students. Daily internet use was reported by 45.3 per cent of the respondents and occasional use by another 42.7 per cent, leaving only a small proportion of weekly users and non-users. Within this connectivity, the attention of the students was concentrated in two domains in particular, namely, messaging applications, which 40.9 per cent of the respondents reported using "always," and video-sharing platforms, which were reported as "always" used by 30.7 per cent. News websites and applications, by contrast, attracted considerably less engagement: 22.2 per cent reported never using them and 21.6 per cent rarely.

Table 1

Table 1 Sample profile and digital access (N=342)

Variable	Frequency (n)	Percentage (%)
Gender		
Female	236	69
Male	106	30.7
Area		
Rural	214	62.6
Semi-urban	52	15.2
Urban	76	22.2
Class		
9	106)	31
10	122	35.7
11	59	17.3
12	55	16.1
Age group		
13–14	76	22.2
15–16	182	53.2
17–18	75	21.9
19+	9	2.6
Primary device		
Smartphone	317	92.7
Other	17	5
Internet access		
Daily	155	45.3
Occasional	146	42.7

Weekly	34	9.9
Never	6	1.8
Daily hours online		
<1 hours	150	44.8
1–2 hours	119	35.5
3-4 hours	50	14.9
>4 hours	16	4.8

3.2. LITERACY BEHAVIOURS AND VULNERABILITY

Verification practices among the respondents were found to be uncommon. Only 19.3 per cent of the students reported that they always verified information sharing and only 13.5 per cent always cross-checked it against an additional source. The perceived importance of source checking was rated somewhat higher, with 38.3 per cent of the students rating it as very important and 7.9 per cent as extremely important; nevertheless, a substantial proportion of about one-third (32.5 per cent) considered it to be only slightly or not at all important. Confidence in evaluating online information was modest in the sample as a whole: only 7.9 per cent of the students described themselves as very or extremely confident, while 65.0 per cent reported that they felt either not at all or slightly equipped to identify fake news. Familiarity with the underlying concepts was lower still. Half of the sample (50.6 per cent) had either not heard of, or had only a vague sense of, the term "fake news," and 56.6 per cent reported the same with regard to fact-checking tools. Slightly more than half of the respondents (52.3 per cent) had received no formal media-literacy instruction at all.

The vulnerability profile that emerged from the data was striking. Almost half of the sample (45.3 per cent) fell within the high sharing-risk group, with the proportion rising to 65.5 per cent among Class 12 students and 66.7 per cent among the 19+ group, as compared with 41.0 to 42.4 per cent across Classes 9 to 11. Gender and area, however, produced relatively limited variation: the rates for female respondents (45.8 per cent) and male respondents (44.8 per cent) were almost identical, and those for rural (43.5 per cent), semi-urban (50.0 per cent) and urban (47.4 per cent) respondents were of similar order.

3.3. CORRELATIONS AND REGRESSIONS

The Pearson correlations were modest but coherent in pattern. Daily hours spent online were associated with both perceived encounter ($r=.153$, $p=.005$) and sharing propensity ($r=.129$, $p=.018$). The strongest single bivariate relationship was between confidence in evaluating reliability and feeling equipped ($r=.304$, $p < .001$). The perceived importance of source checking moved in the opposite direction from perceived encounter ($r = -.129$, $p = .018$); that is, students who placed greater value on sourcing reported encountering fake news less often. Cross-checking and familiarity with fact-checking tools, by contrast, were not significantly associated with either feeling equipped or sharing at the bivariate level.

The three regression models, which summarized in Table 2, refined this pattern in important ways. Model 1, which predicted feeling equipped ($R^2 = .194$), was driven mainly by confidence ($\beta = .29$, $p < .001$), with verification frequency emerging as a smaller positive predictor ($\beta = .15$, $p = .021$) and cross-checking, somewhat unexpectedly, as a negative predictor ($\beta = -.18$, $p = .004$). Model 2, which predicted perceived encounter ($R^2 = .223$), responded primarily to platform composition and geography: heavy video-platform use ($\beta = .32$, $p < .001$) and rural residence ($\beta = .29$, $p < .001$) raised the perceived encounter, while a higher valuation of source checking pulled it down ($\beta = -.19$, $p = .015$). Model 3, which predicted high sharing risk (pseudo-$R^2 = .08$), produced most policy-relevant findings: students enrolled in Class 12 were found to have more than double the odds of their juniors of falling in high-risk group (OR = 2.22, 95% CI [1.01, 4.87], $p = .047$); each unit increase in source-importance valuation reduced the odds by close to one-quarter (OR = 0.77, $p = .046$); and each unit increase in video-platform use raised the odds slightly (OR = 1.21, $p = .049$). When asked which forms of support would be most useful to them, 48.5 per cent of the respondents identified guidance from teachers or parents, 34.2 per cent identified a better understanding of reliable sources and 26.6 per cent chose in-school media literacy classes.

Table 2

Table 2 Significant predictors in the three regression models

Model and predictor	β / OR (95% CI)	Test	p
M1: Feeling equipped (OLS, R^2 = .194)	F (13,314) = 5.82		< .001
Confidence in evaluating reliability	β = .29	t = 5.20	< .001
Verification frequency	β = .15	t = 2.32	0.021
Cross-checking frequency	β = −.18	t = −2.91	0.004
M2: Perceived encounter (OLS, R^2 = .223)	F (14,310) = 6.37		< .001
Video-platform use	β = .32	t = 4.01	< .001
Rural residence	β = .29	t = 3.71	< .001
Source importance	β = −.19	t = −2.45	0.015
M3: High sharing risk (logit, pseudo-R^2 = .08)	χ^2 (14) = 35.59		0.001
Class 12 (vs. lower)	OR = 2.22 [1.01, 4.87]	z = 1.98	0.047
Source importance (per step)	OR = 0.77	z = −2.00	0.046
Video-platform use (per step)	OR = 1.21	z = 1.97	0.049

4. DISCUSSION

Three principal observations run through the present study. The first concerns the very shape of the information environment that these students inhabit. For Bodo medium students, the digital day is built around messaging applications and video platforms, rather than around news headlines and articles. This matters greatly; because the credibility cues on which most media-literacy curricula rely, such as the URL, the masthead and the dateline, tend to be absent from a forwarded WhatsApp message or an autoplaying short video. Within trust-dense group chats, the act of forwarding tends to function more as an act of relational care than as one of publication (Garimella & Eckles, 2020; Malhotra, 2020). Curricula that have been written for headline era are, in this sense, aiming at the wrong target; for the population studied here, the relevant unit of analysis is the forward.

The second observation concerns the gap between what the students do and what they think they are capable of doing. Verification was found to be uncommon, sharing was found to be common and confidence was found to be low; yet 45.3 per cent of the respondents nevertheless reported a high likelihood of sharing without verification. This pattern aligns closely with the body of accuracy-prompt research, which traces much of false sharing not to deliberate intent but to drifting attention at the moment of posting (Pennycook et al., 2021; Pennycook & Rand, 2022). When the students were asked what would help them most, the leading answer was not a toll or an application but guidance from teachers and parents. It is reasonable to expect that repeated, embedded prompts within ordinary classroom and home routines would contribute more in this regard than any single platform feature. Wineburg and McGrew (2019) describe the corresponding skill, namely, lateral, source-first evaluation, as “reading less and learning more” (p. 1), an orientation that ought to occupy the centre of instruction.

The third observation is the most counter-intuitive. Confidence was found to predict feeling equipped strongly, as one would expect from research that treats credibility judgement as a blend of cognitive skill and self-efficacy (Metzger & Flanagin, 2013). Verification frequency mattered as well, but cross-checking, that is, the very activity that one would expect to help the most, turned negative once the other variables were held constant. Two interpretations help to make sense of this pattern. First, the students who cross-check most are often those who feel least sure to begin with (Nygren et al., 2020). Second, the act of searching online to check a claim can sometimes raise rather than lower its perceived veracity (Aslett et al., 2023). Verification, therefore, is best understood as a skill rather than as a frequency. Source-importance valuation, by contrast, was found to be protective in both Model 2 and Model 3, thereby reaffirming the principle that sourcing and corroboration are foundational evaluative competencies (McGrew et al., 2018). The doubled odds among Class 12 students, when combined with the greater autonomy of this group and their heavier consumption of college-related information, mark the late secondary years as a strategic intervention window.

Two contextual factors deserve emphasis at this point. Rural residence was found to be a strong positive predictor of perceived encounter, which is consistent with a second-level digital divide that widens, rather than narrows, as connectivity reaches further (van Deursen & van Dijk, 2018). When this is combined with the limited Bodo-language fact-

checking infrastructure available in the region (Sindakis & Showkat, 2024; Ziipao, 2023), it leaves Bodo medium students navigating an ecosystem whose evaluative tools have not been built for them. Riley et al.'s (2025) work on culturally responsive digital literacy and Winters et al.'s (2021) WhatsApp audio-drama trial taken together suggest a feasible way forward: locally produced micro-lessons, audio-first formats and teacher-led routines tend to outperform translated English-language curricula, a position that is reinforced by Badrinathan's (2021) null effects in rural North India.

5. CONCLUSION

Bodo medium students in the Bodoland Territorial Region inhabit a smartphone-centric, messaging-dominant information environment in which verification is the exception rather than the rule, confidence is modest and almost half of the students are likely to forward content without checking it. Within this picture, three findings carry practical traction in particular. Confidence in evaluating online material is the strongest correlate of feeling equipped; the valuing of source checking is the most consistent protective factor; and Class 12 students carry, by a clear margin, the highest sharing risk.

Three implications follow from these findings for policy and practice. First, media-literacy instruction should be built into the existing school routine rather than treated as an optional add-on and it should target the habits that the data have identified as protective, particularly source-checking and brief, repeated accuracy prompts at the moment of sharing. Second, the materials that are used should be culturally and linguistically grounded: Bodo medium examples, local-language fact-checking guides and teacher scripts that are pitched at messaging-application-dominated information flows are likely to outperform direct translations of English-language modules. Third, teacher and parent capacity-building deserves explicit investment, because the students themselves named guidance from trusted adults as the most useful form of support. Addressing fake-news vulnerability in Bodoland and in comparable vernacular settings across Northeast India and South Asia, will require sustained work on curricula, teacher preparation and Bodo-language information infrastructure that meets students where their digital lives actually unfold.

CONFLICT OF INTERESTS

None.

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